

**WHAT IS CLAIMED IS:**

- SUB B*
1. A method for routing packets among a plurality of nodes in a computer system, the method comprising:

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receiving a first response packet in a first node of said plurality of nodes, said first node comprising a plurality of control packet buffers, each of said plurality of control packet buffers assigned to a different one of a plurality of virtual channels; and

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storing said first response packet in a response buffer which is one of said plurality of control packet buffers, said plurality of control packet buffers further including at least two additional control packet buffers corresponding to at least two additional virtual channels of said plurality of virtual channels, wherein said first response packet is a response to a first control packet belonging to one of said at least two additional virtual channels, and wherein said storing said first response packet in said response buffer is independent of which one of said at least two additional virtual channels said first control packet belongs to.

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2. The method as recited in claim 1 further comprising:

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receiving a second response packet in said first node, said second response packet a response to a second control packet belonging to a different one of said at least two virtual channels from said first control packet; and

storing said second response packet in said response buffer.

3. The method as recited in claim 1 wherein said at least two additional virtual channels

include a non-posted command virtual channel.

4. The method as recited in claim 3 wherein said at least two additional virtual channels further include a probe virtual channel.

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5. The method as recited in claim 1 further comprising:

receiving a first data packet specified by said first response packet; and

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storing said first data packet in a response data buffer, which is one of a plurality of data buffers included in said first node, said response data buffer assigned to said response virtual channel.

6. The method as recited in claim 5 further comprising:

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receiving a second response packet in said first node, said second response packet a response to a second control packet belonging to a different one of said at least two virtual channels from said first control packet;

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storing said second response packet in said response buffer;

receiving a second data packet specified by said second response packet; and

storing said second data packet in said response data buffer.

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7. The method as recited in claim 1 further comprising generating said first control packet in said first node.

8. The method as recited in claim 7 further comprising allocating space to process a

plurality of response packets corresponding to said first control packet prior to transmitting said first control packet, said plurality of response packets including said first response packet.

5 9. The method as recited in claim 8 wherein said generating said first control packet comprises generating a probe packet in response to a second control packet received by said first node.

10 10. A computer system comprising:

a first node configured to transmit a first response packet; and

a second node coupled to receive said first response packet from said first node,  
wherein said second node comprises:

15 a response buffer assigned to a response virtual channel;

a first control packet buffer assigned to a first virtual channel different  
from said response virtual channel; and

20 a second control packet buffer assigned to a second virtual channel  
different from said response virtual channel and said first virtual  
channel;

25 wherein said response packet is a response to a first control packet  
belonging to one of said first virtual channel and said second virtual channel, and  
wherein said second node is configured to store said first response packet in said  
response buffer independent of which of said first virtual channel and said second  
virtual channel to which said first control packet belongs.

11. The computer system as recited in claim 10, wherein said first node is configured to transmit a second response packet to said second node in response to a second control packet belonging to a different one of said first virtual channel and said second virtual channel from said first control packet, and wherein said second node is configured to store said second response packet in said response buffer.

12. The computer system as recited in claim 10 wherein said first virtual channel is a non-posted command virtual channel and said second virtual channel is a probe virtual channel.

13. The computer system as recited in claim 10 wherein said second node further comprises a response data buffer configured to store response data packets specified by response packets, and wherein said first node is configured to transmit a first response data packet specified by said first response packet, and wherein said second node is configured to store said first response data packet in said response data buffer.

14. The computer system as recited in claim 13 wherein said first node is configured to transmit a second response packet to said second node in response to a second control packet belonging to a different one of said first virtual channel and said second virtual channel from said first control packet, and wherein said second node is configured to store said second response packet in said response buffer, and wherein said first node is configured to transmit a second response data packet specified by said second response packet, and wherein said second node is configured to store said second response data packet in said response data buffer.

15. The computer system as recited in claim 10 wherein said second node is configured to generate said first control packet.

16. The computer system as recited in claim 15 wherein said second node is configured to allocate a buffer to store processed data from processing a plurality of response packets corresponding to said first control packet, said second node configured to allocate said buffer prior to transmitting said first control packet, and wherein said plurality of  
5 response packets includes said first response packet.

17. The computer system as recited in claim 16 wherein said first control packet comprises a probe packet generated in response to a second control packet received by said second node.  
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18. A method for routing packets among a plurality of nodes in a computer system, the method comprising:

receiving a first command packet in a first node of said plurality of nodes, said  
15 first command packet belonging to a first virtual channel of a plurality of virtual channels;

generating a first response packet in said first node in response to said first  
command packet; and  
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transmitting said first response packet from said first node using a response virtual channel of said plurality of virtual channels, said transmitting independent of which one of said plurality of virtual channels is said first virtual channel to which said first command packet belongs.  
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19. A computer system comprising:

a first node configured to transmit a first command packet in a first virtual channel of a plurality of virtual channels; and

